

**CLAIMS:**

1. A process for minimizing the thermal aggregation of DNase in liquid solutions comprising DNase as biologically active principle which comprises employing from about 1mM to about 1M of calcium cation in said solutions.
- 5 2. A process for minimizing the thermal aggregation of DNase in liquid solutions comprising DNase as biologically active principle which comprises employing from about 50 mg/ml to about 200 mg/ml. of a sugar in said solutions.
- 10 3. The process according to Claim 1 or 2 comprising the further steps of spray-drying said liquid solution and collecting the spray-dried product as a respirable DNase-containing powder that is therapeutically effective when administered into the lung of an individual.
- ✓ 4. A liquid solution protected against thermal aggregation of DNase as biologically active principle comprising said DNase and a DNase-aggregation-  
15 minimizing amount of calcium cation.
5. A liquid solution protected against thermal aggregation of DNase as biologically active principle comprising said DNase and a DNase-aggregation-minimizing amount of sugar.
- / 6. The solution according to Claim 4 wherein said calcium cation is at a  
20 concentration of from about 1 mM to about 1 M.
7. The solution according to Claim 5 wherein said sugar is at a concentration of from about 50 mg/ml to about 200 mg/ml.
- ✓ 8. The solution according to Claim 4 wherein said calcium cation is supplied by adding from about 10 mM to about 100 mM calcium chloride  
25 therein.

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9. A process for stabilizing a liquid solution comprising DNase as biologically active principle said solution having a pH of less than neutral which comprises employing from about 1 mM to about 1 M of calcium cation in said solution.
- 5 10. The process according to Claim 9 wherein said stabilization is manifest by reduced protein precipitation.
11. The process according to Claim 9 wherein said stabilization is manifest by inhibition of deamidation of the DNase.
- 10 12. The process according to Claim 9 wherein the pH of the solution is about 5.
13. The process according to Claim 1 or 9 wherein said calcium cation is supplied by calcium chloride.
14. The process according to Claim 1 or 9 wherein said calcium cation is supplied by employing from about 10 mM to about 100 mM of calcium chloride therein.
- 15 15. A stabilized liquid solution comprising DNase as biologically active principle and a stabilizing amount of calcium cation said solution having a pH of less than neutral.
- ✓ 16. The solution according to Claim 15 having a pH of about 5.

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